Flavour and Fragrance Journal

EDITOR-IN-CHIEF

Dr Roger Stevens

Low House, Threlkeld, Keswick, Cumbria, CA12 4SQ, U.K.

ASSISTANT EDITOR

A. M. Humphrey
'Tryfan', Shire Lane, Chorleywood,
Herts WD3 5NH, U.K.

EUROPEAN REGIONAL EDITOR

Professor J. J. C. Scheffer
Leiden/Amsterdam Center for Drug Research,
Gorlaeus Laboratories, PO Box 9502,
2300 RA Leiden, The Netherlands

EDITORIAL ADVISORY BOARD

Professor Y. Asakawa
Faculty of Pharmaceutical Sciences,
Tokushima Bunri University, Yamashira-cho,
Tokushima 770, Japan

Professor C. Bicchi
Dipartimento di Scienza e Tecnologia del Farmaco,
Via P. Giuria 9, 10125 Torino, Italy

Dr D. F. Cutler
Jodrell Laboratory, Royal Botanic Gardens, Kew,
Richmond, Surrey TW9 3DS, U.K.

Professor H. L. De Pooter
Laboratory of Organic Chemistry,
Faculty of Agricultural Sciences,
State University of Gent, Coupure links 653,
B-9000 Gent, Belgium

Dr S. G. Deans
Aromatic and Medicinal Plant Group,
Department of Biochemical Sciences,
The Scottish Agricultural College,
Auchincruive, Ayr, KA6 5HW, U.K.

Dr H.-P. Hanssen
IMB, Lurup 4, D-22927 Grosshansdorf, Germany

Professor R. Hiltunen
Department of Pharmacy, P.O. Box 56 (Viikinkaari 5),
University of Helsinki, FIN-00014, Finland

Dr E. V. Lassak
Phytochemical Services,
35 Shinfield Avenue, St Ives, NSW 2075, Australia

Mr P. A. P. Liddle
Martini Rossi, 19 Av. Michelet,
93400 St Quen, France

Professor R. C. Lindsay
Department of Food Science,
University of Wisconsin,
1605 Linden Drive,
Madison, WI 53706-3046, U.S.A.

Professor A. J. MacLeod
Dolau-Gwyn, 12 The Coppice, Rhinefield Road,
Brockenhurst, Hampshire SO42 7QZ, U.K.

Dr J. R. Mor
Givaudan-Roure Research Ltd,
Uberlandstrasse 138, CH-8600
Dubedorf, Switzerland

Professor K. Mori
Department of Chemistry,
Science University of Tokyo, 1-3 Kagurazaka,
Shinjuku-ku, Tokyo 162, Japan

Dr F. Näf
Firmenich SA, Research Laboratories,
Case Postale, CH 1211 Geneva 8, Switzerland

Dr U. Ravid
Agricultural Research Organisation,
Newe Ya'ar Research Center,
P.O. Box 90000, Haifa 31-900, Israel

Professor P. Schreier
Lehrstuhl für Lebensmittelchemie,
Universität Würzburg,
Am Hubland, D-97074 Würzburg, Germany

Professor R. Tressl
Fachgebiet Chemisch-technische Analysis,
Technische Universität Berlin, Seestrasse 13,
D-10623 Berlin 65, Germany

Mr G. Uhde
Firmenich SA, 1 Route des Jeunes,
Case Postale 239,
CH-1211 Genève 8, Switzerland

Professor P. Weyerstahl
Institut für Organische Chemie,
Technische Universität Berlin,
Strasse des 17 Juni 135, D-10623 Berlin, Germany

AIMS AND SCOPE

Flavour and Fragrance Journal is an international journal devoted to the rapid publication of scientific and technical papers on essential oils and related products. Its high scientific standard and international character will be ensured by regional editorial support and a strict refereeing system. Emphasis will be placed on analytical aspects and the important role that analysis in its widest sense plays in the support of research and applications.

As well as natural and naturally derived products, complementary synthetic products will be included, where appropriate. The comprehensive coverage of the journal will be reflected in the wide range of product types embraced, such as fragrances and their compositions, and the flavour, colours and odours of foodstuffs. There are many associated topics of interest, often requiring the use of interdisciplinary techniques. In addition to discussion of their end uses, coverage will include such important integral areas as biomedical sciences and legislation.

The overall aim is to produce a journal of the highest quality which provides a forum for the exchange of a wide variey of information on all aspects of flavours, fragrances and related materials, and which is valued by readers and contributors alike.

Range of topics will include:

Oleoresins,
Essential Oils,
Fruit and Vegetable Juices,
Raw and Cooked Food,
Pigments and Colours,
Toxicology,
Legislation,
Analytical Techniques and Applications.

WILEY

JOHN WILEY & SONS

Chichester · New York · Brisbane · Toronto · Singapore

FFJOED 10 1–402 (1995)
ISSN 0882–5734

COPYING OF ARTICLES

The code and the copyright notice appearing at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients, on the condition that the copier pay for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. The per-copy fee is to be paid through the Copyright Clearance Center Inc and details of their authorisation schemes can be obtained from them at 27 Congress Street, Salem, MA 01970, USA. Tel: (508) 744 3350, Fax: (508) 745 9379. This consent does not extend to other kinds of copying such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Such permission requests, or other inquiries, should be addressed to the publisher.

Typeset by Footnote Graphics, Warminster, Wiltshire
Printed and bound in Great Britain by BPC Wheatons Ltd, Exeter, Devon

Flavour and Fragrance Journal

(*Flavour Fragr. J.*)

Contents

VOLUME 10 NUMBER 6 NOVEMBER–DECEMBER 1995

Japanese Sour *Citrus* Fruits. Part III. Volatile Constituents of Sudachi and Mochiyuzu Oils
S. M. Njoroge, H. Ukeda, H. Kusunose and M. Sawamura 341

Volatile Constituents from Tamarillo (*Cyphomandra betacea* Sendtn.) Fruit
A. Torrado, M. Suárez, C. Duque, D. Krajewski, W. Neugebauer and P. Schreier 349

Comparison of the Monoterpenes Derived from Green Leaves and Fresh Rhizomes of *Curcuma longa* L. from India
M. McCarron, A. J. Mills, D. Whittaker, T. P. Sunny and J. Verghese 355

Volatile Leaf Oils of some South-western and Southern Australian Species of the Genus *Eucalyptus*. Part VI—Subgenus Symphyomyrtus, Section Adnataria
C. M. Bignell, P. J. Dunlop, J. J. Brophy and J. F. Jackson 359

Constituents of the Leaf Essential Oil of *Hypericum perforatum* L. from India
P. Weyerstahl, U. Splittgerber, H. Marschall and V. K. Kaul 365

Influence of Day Length and Leaf Insertion on the Composition of Marjoram Essential Oil
G. Circella, Ch. Franz, J. Novak and H. Resch 371

Volatile Constituents of Ambarella (*Spondias cytherea* Sonnerat) Fruit
K. C. Wong and F. Y. Lai 375

Composition and Study of the Variability of the Essential Oil of *Thymus funkii* Cosson
R. Vila, B. Freixa, S. Cañigueral, T. Adzet, X. Tomàs and J. J. Molins 379

Identification of a Powerful Aromatic Component of *Vitis vinifera* L. var. Sauvignon Wines: 4-Mercapto-4-methylpentan-2-one
P. Darriet, T. Tominaga, V. Lavigne, J.-N. Boidron and D. Dubourdieu 385

Book Review 393

Forthcoming Meetings 395

Author Index 397

Key Word Index 399

Volume Contents iii

Abstracted/Indexed in Analytical Abstracts, BIOSIS, CAB Abstracts, Cambridge Scientific Abstracts, Chemical Abstracts Services, Chromatography Abstracts, Current Awareness in Biological Sciences, Excerpta Medica

FFJOED 10 (6) 341–402 (1995)
ISSN 0882–5734

The Essential Oils of Australian *Austromyrtus* sens. lat. Part 1. The *A. dulcis* Group
J. J. Brophy, R. J. Goldsack, C. J. R. Fookes and P. I. Forster 69

Aromatic Plants of Tropical Central Africa. Part XVII. 6,7-Epoxymyrcene, the Major Unusual Constituent of *Lippia multiflora* s.l. Moldenke Essential Oil from the Central African Republic
C. Menut, G. Lamaty, J. M. Bessière, J. Koudou and J. Maidou 75

Volatile Constituents of Durian (*Durio zibethinus* Murr.)
K. C. Wong and D. Y. Tie 79

Volatile Leaf Oils of some South-western and Southern Australian Species of the Genus *Eucalyptus*. Part IV. Subgenus Symphyomyrtus, Section Dumaria, Series Dumosae
C. M. Bignell, P. J. Dunlop, J. J. Brophy and J. F. Jackson 85

Composition of the Essential Oil of *Lavandula pinnata* L. fil. var. *pinnata* Grown on Madeira
A. C. Figueiredo, J. G. Barroso, L. G. Pedro, I. Sevinate-Pinto, T. Antunes, S. S. Fontinha, A. Looman and J. J. C. Scheffer 93

Aromatic Plants of Tropical Central Africa. Part XX. The Occurrence of 1-Phenylhepta-1,3,5-triyne in the Essential Oil of *Bidens pilosa* L. from Cameroon
P. H. Amvam Zollo, J. R. Kuiaté, C. Menut, G. Lamaty, J. M. Bessière, J. C. Chalchat and R. Ph. Garry 97

Kinetics of Microwave Extraction of Rosemary Leaves in Hexane, Ethanol and a Hexane + Ethanol Mixture
S. S. Chen and M. Spiro 101

Comparative Study of the Antifungal Activity of Essential Oils from Aromatic Plants Growing Wild in the Central Region of Argentina
J. A. Zygadlo and N. R. Grosso 113

Book Reviews 119

Forthcoming Meetings 122

VOLUME 10 NUMBER 3 MAY–JUNE 1995

This issue is dedicated to Professors A. Baerheim Svendsen and K.-H. Kubeczka on the occasion of their 75th and 60th birthdays, respectively

Editorial 125

Cyclodextrin Derivatives in GC Separation of Enantiomers of Essential Oil, Aroma and Flavour Compounds
C. Bicchi, V. Manzin, A. D'Amato and P. Rubiolo 127

Analysis of the Essential Oils of Some *Agastache* Species Grown in Scotland from Various Seed Sources
K. P. Svoboda, J. Gough, J. Hampson and B. Galambosi 139

Agarwood Oil (*Aquilaria agallocha* Roxb.). Its Composition and Eight New Valencane-, Eremophilane-, and Vetispirane-Derivatives
R. Näf, A. Velluz, R. Brauchli and W. Thommen 147

An Introduction to the Scent of Cacti
R. Kaiser and L. Tollsten 153

Enantiomeric Composition of Sesquiterpene Hydrocarbons of the Essential Oil of *Cedrela odorata* L.
I. H. Hardt, A. Rieck, C. Fricke and W. A. König 165

Composition of the Root Essential Oils of Several *Geum* Species and Related Members of the Subtribus Geinae (Rosaceae)
C. Vollmann and W. Schultze 173

Constituents of the Essential Oil from the Rhizomes of *Hedychium acuminatum* Roscoe
P. Weyerstahl, H. Marschall, S. Schneider and G. C. Subba 179

Comparison of Sesquiterpenes from Field Collected Material and *In vitro* Cultures of *Jamesoniella autumnalis* (DC.) Steph.
H. Becker and M. Blechschmidt 187

The Absolute from Flowers of *Jasminum auriculatum* Vahl from India
D. Joulain and R. Laurent 193

Composition of the Essential Oil of *Micromeria varia* Benth. ssp. *thymoides* (Sol. ex Lowe) Pérez var. *thymoides*, an Endemic Species of the Madeira Archipelago
L. G. Pedro, A. C. Figueiredo, J. G. Barroso, S. S. Fontinha, A. Looman and J. J. C. Scheffer 199

Gas Chromatographic Analysis and Biogenetic Relationships of Monoterpene Enantiomers in Scots Pine and Juniper Needle Oils
R. Hiltunen and I. Laakso 203

Cyclosantalal and Epicyclosantalal—New Sesquiterpene Aldehydes from East Indian Sandalwood Oil
E.-J. Brunke, J. Vollhardt and G. Schmaus 211

Comparative Headspace Analysis of Living and Fresh Cut Lime Tree Flowers (*Tiliae flores*)
G. Buchbauer, B. Remberg, L. Jirovetz and A. Nikiforov 221

Essential Oil and Glycosidically Bound Volatiles of Lemon-scented Thyme, *Thymus* × *citriodorus* (Pers.) Schreb.
E. Stahl-Biskup and J. Holthuijzen 225

Forthcoming Meetings 231

VOLUME 10 NUMBER 4 JULY–AUGUST 1995

Volatiles of Cold and Burning Fragrance Candles with Lavender and Apple Aromas
G. Buchbauer, L. Jirovetz, M. Wasicky and A. Nikiforov 233

Investigation of the Essential Oil of Cinnamon Leaf Grown at Bangalore and Hyderabad
G. R. Mallavarapu, S. Ramesh, R. S. Chandrasekhara, B. R. Rajeswara Rao, P. N. Kaul and A. K. Bhattacharya 239

The Sherry-lactones and Solerone. Their Identification in Dried Figs
R. Näf, A. Jaquier, A. F. Boschung and M. Lindström 243

Composition of the Essential Oil from the Underground Parts of *Geum reptans* L. (Rosaceae)
W. Schultze and C. Vollman 249

Constituents of the Essential Oil of *Leptospermum javanicum* Blume from Peninsular Malaysia
I. bin Jantan, N. A. M. Ali, A. S. Ahmad and A. R. Ahmad 255

Kinetics of Isothermal and Microwave Extraction of Essential Oil Constituents of Peppermint Leaves into Several Solvent Systems
M. Spiro and S. S. Chen 259

Volatile Compounds of *Polygala senega* L. var. *latifolia* Torrey et Gray Roots
S. Hayashi and H. Kameoka 273

Determination of the Enantiomeric Composition of α-Terpineol in Essential Oils
U. Ravid, E. Putievsky and I. Katzir 281

Book Review 285

Forthcoming Meetings 286

VOLUME 10 NUMBER 5 SEPTEMBER–OCTOBER 1995

Synthesis and Odour of Bicyclo[2.2.2]octanone Derivatives: β-Hydroxy Ketones and Enones
H. Spreitzer, C. Anderwald and G. Buchbauer 287

The Essential Oils of Australian *Austromyrtus* sens. lat. Part 2. The *Astromyrtus lasioclada* Group
J. J. Brophy, R. J. Goldsack and P. I. Forster 293

Constituents of the Absolute of *Boronia megastigma* Nees. from Tasmania
P. Weyerstahl, H. Marschall, W.-R. Bork, R. Rilk, S. Schneider and H.-C. Wahlburg 297

Volatile Leaf Oils of some South-western and Southern Australian Species of the Genus *Eucalyptus*. Part V. Subgenus Symphyomyrtus, Section Bisectaria, Series Oleosae
C. M. Bignell, P. J. Dunlop, J. J. Brophy and J. F. Jackson 313

Chemical Composition of the Essential Oils of Chemotypes of *Pimenta racemosa* var. *racemosa* (P. Miller) J. W. Moore (Bois d'Inde) of Guadeloupe (F.W.I.)
J. Abaul, P. Bourgeois and J. M. Bessiere 319

Antimicrobial and Antioxidant Properties of *Syzygium aromaticum* (L.) Merr. & Perry: Impact upon Bacteria, Fungi and Fatty Acid Levels in Ageing Mice
S. G. Deans, R. C. Noble, R. Hiltunen, W. Wuryani and L. G. Pénzes 323

HPLC Determination of α- and β-Thujone, Potentially Toxic Components of Natural Flavourings, in Alcoholic Beverages
G. Micali and F. Lanuzza 329

Book Reviews 335

Forthcoming Meetings 340

VOLUME 10 NUMBER 6 NOVEMBER–DECEMBER 1995

Japanese Sour *Citrus* Fruits. Part III. Volatile Constituents of Sudachi and Mochiyuzu Oils
S. M. Njoroge, H. Ukeda, H. Kusunose and M. Sawamura 341

Volatile Constituents from Tamarillo (*Cyphomandra betacea* Sendtn.) Fruit
A. Torrado, M. Suárez, C. Duque, D. Krajewski, W. Neugebauer and P. Schreier 349

Comparison of the Monoterpenes Derived from Green Leaves and Fresh Rhizomes of *Curcuma longa* L. from India
M. McCarron, A. J. Mills, D. Whittaker, T. P. Sunny and J. Verghese 355

Volatile Leaf Oils of some South-western and Southern Australian Species of the Genus *Eucalyptus*. Part VI—Subgenus Symphyomyrtus, Section Adnataria
C. M. Bignell, P. J. Dunlop, J. J. Brophy and J. F. Jackson 359

Constituents of the Leaf Essential Oil of *Hypericum perforatum* L. from India
P. Weyerstahl, U. Splittgerber, H. Marschall and V. K. Kaul 365

Influence of Day Length and Leaf Insertion on the Composition of Marjoram Essential Oil
G. Circella, Ch. Franz, J. Novak and H. Resch 371

Volatile Constituents of Ambarella (*Spondias cytherea* Sonnerat) Fruit
K. C. Wong and F. Y. Lai 375

Composition and Study of the Variability of the Essential Oil of *Thymus funkii* Cosson
R. Vila, B. Freixa, S. Cañigueral, T. Adzet, X. Tomàs and J. J. Molins 379

Identification of a Powerful Aromatic Component of *Vitis vinifera* L. var. Sauvignon Wines: 4-Mercapto-4-methylpentan-2-one
P. Darriet, T. Tominaga, V. Lavigne, J.-N. Boidron and D. Dubourdieu 385

Book Review 393

Forthcoming Meetings 395

Author Index 397

Key Word Index 399